



AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (canceled)

2. (canceled)

3. (currently amended) ~~The circuit board assembly of claim 2 wherein A~~
circuit board assembly, comprising:

a. a circuit board;

b. an integrated circuit package having a substrate with an array of solder columns extending from a bottom surface of the substrate to the circuit board when the integrated circuit package is mounted on the circuit board, the integrated circuit package has having a lid affixed to the substrate, the lid having an outer perimeter that is smaller than an outer perimeter of the substrate;

c. at least one support member affixed to at least one of a side of the substrate and a top surface of the substrate when the integrated circuit package is mounted to the circuit board, the at least one support member extending to the circuit board, each support member having a flange extending over the upper surface of the substrate, the flange of each support member affixed to at least one of the outer perimeter of the lid and the upper surface of the substrate by adhesive after the integrated circuit package is mounted to the circuit board, the adhesive accommodating any variation in height of the integrated circuit package.

4. (previously presented) The circuit board assembly of claim 3 wherein the support member comprises a frame surrounding the integrated circuit package.

5. (currently amended) The circuit board assembly of claim 4 wherein the frame is rectangular and has a support leg and an inwardly extending flange at each corner, each support leg having first and second segments approximately at right angles to each other and each flange having first and second segments at approximately right angles to each other, each flange secured to at least one of the outer perimeter of the lid and the upper surface of the substrate by the adhesive.

6. (currently amended) The circuit board assembly of claim 5 wherein the flanges are secured to both the outer perimeter of the package lid and the upper surface of the substrate by the adhesive.

7. (previously presented) The circuit board assembly of claim 3 wherein the integrated circuit package is a column grid array integrated circuit package.

8. (currently amended) ~~The circuit board assembly of claim 2 wherein the support member comprises a~~ A circuit board assembly, comprising:

a. a circuit board;

b. an integrated circuit package having a substrate with an array of solder columns extending from a bottom surface of the substrate to the circuit board when the integrated circuit package is mounted on the circuit board; and

c. a frame for supporting the integrated circuit package, the frame surrounding the integrated circuit package and extending to the circuit board with an inner side of the frame affixed by adhesive to at least one of an outer side of the substrate and an outer perimeter of a lid affixed to the substrate, the adhesive accommodating any variation in height of the integrated circuit package.

9. (currently amended) ~~The circuit board assembly of claim 2 wherein the support member comprises a~~ A circuit board assembly, comprising:

a. a circuit board;

b. an integrated circuit package having a substrate with an array of solder columns extending from a bottom surface of the substrate to the circuit board when the integrated circuit package is mounted on the circuit board; and

c. at least one support leg affixed to at least one of a side of the substrate and a top surface of the substrate by adhesive after the integrated circuit package is mounted to the circuit board, the at least one support leg extending to the circuit board, the adhesive accommodating any variation in height of the integrated circuit package.

10. (currently amended) The circuit board assembly of claim 9, wherein the integrated circuit package has a lid affixed to the substrate, the lid having an outer perimeter that is smaller than an outer perimeter of the substrate, each support leg having a flange extending over an upper surface of the substrate, each flange affixed to at least one of an outer perimeter of the lid and the upper surface of the substrate by the adhesive, ~~the adhesive accommodating any variation in height of the integrated circuit package.~~

11. (previously presented) The circuit board assembly of claim 9 wherein the integrated circuit package is rectangular and has a support leg at each corner.

12. (currently amended) The circuit board assembly of claim 11, wherein each support leg is affixed to at least one of an outer perimeter of a lid affixed to the substrate and an outer perimeter of the substrate by the adhesive, ~~the adhesive accommodating any variation in height of the integrated circuit package.~~

13. (previously presented) The circuit board assembly of claim 10 wherein the integrated circuit package is a column grid array integrated circuit package.

14. (previously presented) A circuit board assembly, comprising:
- a. a circuit board;
 - b. a column grid array integrated circuit package having a substrate with an array of solder columns extending from a bottom surface of the substrate to the circuit board when the column grid array integrated circuit package is mounted on the circuit board, the column grid array integrated circuit package having a lid affixed to the substrate, the lid having an outer perimeter that is smaller than an outer perimeter of the substrate; and
 - c. at least one support member affixed to at least one of an outer perimeter of the lid and a top surface of the substrate by adhesive after the column grid array integrated circuit package has been mounted to the circuit board, the adhesive accommodating any variation in height of the column grid array integrated circuit package, the at least one support member extending to the circuit board.
15. (currently amended) The circuit board assembly of claim 14, wherein each support member has a flange extending over the upper surface of the substrate, the flange of each support member affixed to at least one of the outer perimeter of the lid and the upper surface of the substrate by the adhesive.

16. (currently amended) The circuit board assembly of claim 15 wherein the column grid array integrated circuit package is rectangular and the support member comprises a rectangular frame extending around the substrate, the frame having a support leg and an inwardly extending flange at each corner, each support leg having first and second segments approximately at right angles to each other and each flange having first and second segments at approximately right angles to each other, each flange secured to at least one of the outer perimeter of the lid and the upper surface of the substrate by the adhesive.

17. (canceled)

18. (currently amended) ~~The method of claim 17 wherein the step of affixing the at least one support member includes providing a support member having~~ In a circuit board assembly having a circuit board and an integrated circuit package, the integrated circuit package having a substrate with an array of solder columns extending from a bottom surface of the substrate to the circuit board, a method of supporting the integrated circuit package against compressive force, comprising the step of affixing at least one support member to at least one of a side and a top of the substrate after the integrated circuit package has been mounted on the circuit board, the support member having at least a portion that extends from the substrate to the circuit board and flanges that extend over a portion of a top of the substrate when the support member is affixed to the at least one of the side and top of the substrate and affixing the flanges to the top of the substrate by adhesive, the adhesive accommodating any variation in height of the integrated circuit package.

19. (currently amended) ~~The method of claim 17 wherein the step of providing the support member includes providing a support member comprising~~ In a circuit board assembly having a circuit board and an integrated circuit package, the integrated circuit package having a substrate with an array of solder columns extending from a bottom surface of the substrate to the circuit board, a method of supporting the integrated circuit package against compressive force, comprising the step of affixing a frame that extends around the substrate and affixing the frame to the substrate by adhesive, the frame having at least a portion that extends from the substrate to the circuit board, the adhesive accommodating any variation in height of the integrated circuit package.

20. (currently amended) ~~The method of claim 17 wherein the step of affixing the at least one support member includes providing at least one support member comprising a~~ In a circuit board assembly having a circuit board and an integrated circuit package, the integrated circuit package having a substrate with an array of solder columns extending from a bottom surface of the substrate to the circuit board, a method of supporting the integrated circuit package against compressive force, comprising the step of affixing at least one support leg and affixing the support leg to the integrated circuit package by adhesive, the support leg having at least a portion that extends from the substrate to the circuit board, the adhesive accommodating any variation in height of the integrated circuit package.

21. (currently amended) The method of claim 20 wherein the step of providing at least one support ~~member~~ leg comprises providing at least four support ~~members~~ legs spaced equidistantly around a perimeter of the substrate.

REMARKS

Claims 3 – 16 and 18 - 21 are now pending in the application. Applicants thank the Examiner for the allowance of claims 14 – 16 and that claims 3 – 13 and 18 – 21 would be allowable if rewritten into independent form incorporating the limitations of the respective claims from which they depend.

Applicants have rewritten claims 3, 8 and 9, which depended from claim 2, into independent form incorporating the limitations of claims 1 and 2. Applicants have rewritten claims 18, 19 and 20, which depended from claim 17, into independent form incorporating the limitations of claim 17. Applicants submit that claims 3, 8, 9 and 18 – 20, as amended, are now in condition for allowance.

Claims 4 – 7 depend directly or indirectly from amended claim 3 and are allowable for at least that reason.

Claims 10 – 13 depend directly or indirectly from amended claim 9 and are allowable for at least that reason.

Claim 21 depends from amended claim 20 and is allowable for at least that reason.

Applicants have also made certain clerical amendments to claims 5, 6, 10, 12, 15, 16 and 21.

Applicants have canceled claims 1, 2 and 17, which stood rejected under 35 U.S.C. § 102, and made the amendments discussed above to accept the allowed/allowable subject matter to expedite prosecution of this application. However, applicant disagrees that these claims were properly rejected and reserves the right to prosecute them in a continuation application.

Applicants submit that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore

respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. Applicants submit that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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By: R.A. Fuller III
Roland A. Fuller III
Reg. No. 31,160

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

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